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EXAMINER
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ART UNIT	PAPER NUMBER
2762	4

DATE MAILED: 12/23/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

X Responsive to communication(s) filed on *May 27, 1997* _____ .

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire _____3_____ month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

X Claim(s) *1-20* _____ is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

X Claim(s) *1-20* _____ is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

X The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____ .

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

X Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- *SEE OFFICE ACTION ON THE FOLLOWING PAGES* ---

DETAILED ACTION

Specification

1.   The title of the invention is not descriptive. A new title is required that is clearly indicative

of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims
under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was
commonly owned at the time any inventions covered therein were made absent any evidence to
the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor
and invention dates of each claim that was not commonly owned at the time a later invention was
made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35
U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

3.   Claims 1-17 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Frid-Nelson (5,740,444).

Claim 1, Frid-Nelson teaches or suggests a computer readable medium (see Fig 1A, #107)

containing computer executable instructions (via application program(s) 170, Fig 1B) to perform

a method for assisting a computer programmer (user, Fig 1B) in real time (dynamically, see

abstract and summary) to complete a programming language statement (symbol - see abstract and

summary) in a computer program (via symbol browsing in an object-oriented development

system), comprising:

enabling a programming language editor (via windows interface 200, col 5, lines 57-67)

having a character position cursor (screen cursor) and a randomly postionable pointer (pointer);

partially compiling (via incremental compiling) available ones of a plurality of

programming language statements (symbol information) in said computer program [see col 10,

lines 1-9, where the compiler "remembers" or preserves symbol information between compilations

by storing references (e.g., line numbers) in the object file. If one makes a change to a program,

but the next compilation fails, the symbol information is still available from the previous

compilation. Therefore, the user can still browse through the program to help pinpoint where the

problem lies. In a preferred embodiment, this feature is provided as a Preserve Symbols option (a

default setting)];

defining a finite set of programming language statement information (see object

hierarchies, units, procedures, functions, variables, types, constants, and other symbols - col 9,

lines 16-21) that is relevant to at least one segment (variable, type) of a present programming

language statement (unit, procedure, function) from among said plurality of programming

language statements (symbols) that is proximate to said character position cursor; and

generating a passive assist window (see option 4, col 9) that contains said finite set of

programming language statement information (details of a symbol) in a location proximate to said

character position cursor (by clicking on the right mouse button).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to assist a computer programmer in real time to complete a programming

language statement in a computer program, as taught by Frid-Nielsen, because said assisting

successfully and advantageously simplifies the creation and management of object-oriented

applications with complex class hierarchies (Frid-Nielsen, col 3, lines 19-25).

Claim 12, Frid-Nelson teaches or suggests a system (see symbol browsing in an object-

oriented development system - abstract and summary) for passively assisting a user in real time

(dynamically) to complete a programming language statement (or symbol), comprising:

a programming language editor (via windows interface 200, col 5, lines 57-67) having a

character position cursor (screen cursor) and a randomly postionable pointer (pointer);

means for partially compiling (via incremental compiling) available ones of a plurality of

programming language statements (symbol information) in said computer program [see col 10,

lines 1-9, where the compiler "remembers" or preserves symbol information between compilations

by storing references (e.g., line numbers) in the object file. If one makes a change to a program,

but the next compilation fails, the symbol information is still available from the previous

compilation. Therefore, the user can still browse through the program to help pinpoint where the

problem lies. In a preferred embodiment, this feature is provided as a Preserve Symbols option (a

default setting)]; and

means for generating an assist window (see option 4, col 9) that contains said finite set of

programming language statement information (details of a symbol) in a location proximate to said

character position cursor (by clicking on the right mouse button), said assist window being

selected from at least one of a group comprised of: a selection menu assist window (see Fig 6A,

601) and an informational display assist window (Fig 6A, 610).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to assist a computer programmer passively in real time to complete a

programming language statement in a computer program, as taught by Frid-Nielsen, because said

assisting successfully and advantageously simplifies the creation and management of object-

oriented applications with complex class hierarchies (Frid-Nielsen, col 3, lines 19-25).

Claim 17, Frid-Nelson teaches or suggests a real time (dynamically, see abstract and

summary) method (see symbol browsing in an object-oriented development system - abstract,

summary) to complete a programming language statement (symbol) in a computer program,

comprising:

enabling a programming language editor (via windows interface 200, col 5, lines 57-67)

having a character position cursor (screen cursor);

continuously resolving (via incremental compiling) symbolic portions (symbols) of

available ones of a plurality of programming language statements (see object hierarchies, units,

procedures, functions, variables, types, constants, and other symbols - col 9, lines 16-21) into a

partial program compilation (col 10, lines 1-9);

identifying (see col 10, lines 22-31) a present programming language statement (symbol)

and at least one segement of said present programming language statement (object, procedure,

function, variable, or other symbol) based on a location of said character position cursor (and

right-button clicking on a mouse);

determining a finite set of information (symbol properties) related to said present

programming language statement (symbol) and said at least one segment of said present

programming language statement (object, procedure, function, variable) based on said partial

program compilation; and

generating an assist window that contains said finite set of information (see Fig 6A, 601,

and 6B, 620).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to assist a computer programmer in real time to complete a programming

language statement in a computer program, as taught by Frid-Nielsen, because said assisting

successfully and advantageously simplifies the creation and management of object-oriented

applications with complex class hierarchies (Frid-Nielsen, col 3, lines 19-25).

Claim 2, Frid-Nielsen teaches or suggests automatically attempting the above (see auto

tracking - col 13, lines 3-8).

Claim 3-4, Frid-Nielsen teaches or suggests randomly performing the above (via option 4,

col 9, and col 11, lines 45-56).

Claim 5, Frid-Nielsen teaches or suggests generating a simultaneous plurality of passive

assist windows ... (see Figs 6B, 7A, and 7C-N).

Claim 6, Frid-Nielsen teaches or suggests generating a finite list ... (see Fig 6A, 601).

Claim 7, Frid-Nielsen teaches or suggests creating and enabling a selection assist window

(see Figs 6A-B).

Claim 8, Frid-Nielsen teaches or suggests replacing ... (as made obvious and enabled by

menu 410, Fig 4A, to search and replace).

Claim 9, Frid-Nielsen teaches or suggests generating an argument list and type (see Figs

7A-B).

Claim 10, Frid-Nielsen teaches or suggests reverse parsing ... (see Fig 7A).

Claim 11, Frid-Nielsen teaches or suggests an informational display window (Fig 6B) ...

and highlighting a present argument (via mouse click - col 11, lines 45-55).

Claim 13, Frid-Nielsen teaches or suggests identifying a desired menu item (via a mouse)

... and ... replacing a segement ... (via menu 410, Fig 4A).

Claim 14, Frid-Nielsen teaches or suggests displaying information in an informational display assist window ... (see Figs 7C-7N).

Claim, 15, Frid-Nielsen teaches or suggests automatic enabling ... (see auto tracking - col 13, lines 3-8).

Claim 16, Frid-Nielsen teaches or suggests random enabling (via option 4, col 9, and col 11, lines 45-56).

Claim 19, Frid-Nielsen teaches or suggests displaying a selection menu and an informational display assist window (see Figs 6A-B).

Claim 20, Frid-Nielsen teaches or suggests a procedure call (see function call to getchar() - col 6, lines 45-48).

Allowable Subject Matter

4.   Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

Applicant is encouraged to review the prior art of record but not relied upon in the official

Office Action, listed on attached Form PTO-892. The prior art anticipates or makes obvious,

singularly or by combination, some limitations of Applicant's claimed invention.

6.   **Any response to this action should be mailed to:**

> Commissioner of Patents and Trademarks
> Washington, D.C. 20231

or faxed to:

> (703) 308-5356, (for formal communications intended for entry or for
> informal or draft communications, please label "PROPOSED" or
> "DRAFT")

> Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal
> Drive, Arlington. VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner
should be directed to Peter Corcoran whose telephone number is (703) 308-6685.

Any inquiry of a general nature or relating to the status of this application should be
directed to the Group 2700 receptionist whose telephone number is (703) 305-3900.

Peter J. Corcoran, III
December 21, 1998

Tariq R. Hafiz
Supervisory Patent Examiner
Technology Center 2700